5. Chaparral City Water Company

The Chaparral City Water Company service area contains approximately 20 square miles of land and includes the City of Fountain Hills and the foothills and bajadas of the McDowell Mountains. Chaparral City Water Company service area is located northwest of Beeline Highway and south of McDowell Mountain Regional Park. The City of Fountain Hills is an exclusive residential community, with local economic activities consisting of service-related businesses for its residents. The area's economic base stems mainly from the off-site employment of its residents.

According to the ADWR Annual Water Withdrawal and Use Report, in the Chaparral City Water Company service area in 1998, a total of 5,239 af of water were produced and delivered. Of that total, 1,083 af were pumped groundwater, and 4,156 af were CAP water.

A. Plans to Take and Use CAP Water

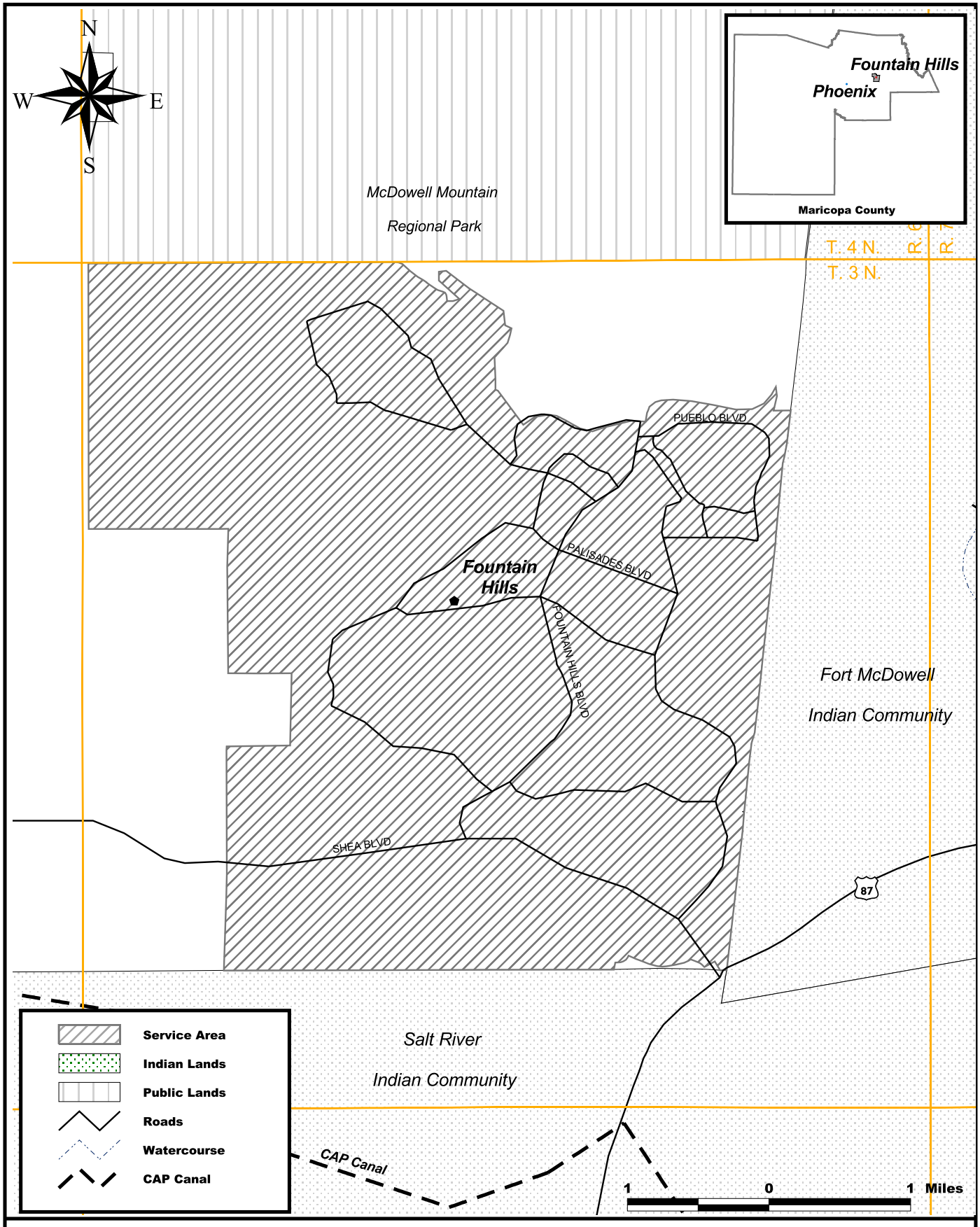
The Chaparral City Water Company service area currently has a subcontract for 6,978 af of water. Under the Settlement Alternative would receive an additional 1,931 af of CAP water. That CAP water would be delivered for a 50-year contract period (i.e., from 2001-2051) and would be used to supplement both current and projected water supply demands over the next 50 years and would help reduce the continuing dependence on pumping groundwater from an overdrafted groundwater system. Table L-M&I-27 outlines the proposed allocations by alternative.

Table L-M&I-27
CAP Allocation Draft EIS
Chaparral City Water Company – Proposed CAP Allocation

Alternative	Allocation (in afa)	Priority
Settlement Alternative	1,931	M&I
No Action	0	-
Non-Settlement Alternative 1	1,931	M&I
Non-Settlement Alternative 2	0	-
Non-Settlement Alternative 3A	0	-
Non-Settlement Alternative 3B	2,112	NIA
Existing CAP Allocation	6,978	-

Figure L-M&I-14 shows the service area for Chaparral City Water Company, which covers approximately 12,994 acres. CAP water can be delivered anywhere within the designated service area.

The Chaparral City Water Company currently has a turnout on the CAP system at 124th Street and Shea Boulevard. The water is processed at their treatment plant at Shea and Fountain Hills Boulevards. The existing system has capacity to treat and deliver their existing and additional CAP allocations (Laak 2000).



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CAP Allocation Draft EIS
General Location Map
Chaparral City Water Company

Figure #L-M&I--14

B. Population Projection

The 1985 population of the Chaparral City Water Company service area was 9,000. The estimated 2001 population level is 22,138, and the estimated 2051 population level is 55,096.

C. Water Demand and Supply Quantities

As previously shown in Appendix C–M&I Sector Water Uses, it is estimated that water demand in the Chaparral City Water Company service area would increase from 6,687 af in year 2001 to 16,641 af in year 2051. The projected water uses both by water source and alternatives are provided below in Table L-M&I-28. Based on these anticipated water demands, the CAP water which would be allocated under the Settlement Alternative would provide 29 percent and 12 percent of the current estimated water supply required for the Chaparral City Water Company service area for the years 2001 and 2051, respectively.

Table L-M&I-28
CAP Allocation Draft EIS
Chaparral City Water Company – Projected Water Use

Alternative	Total CAP Deliveries		Groundwater		Effluent		CAGRD (Groundwater)		Total Demand	
	2001	2051	2001	2051	2001	2051	2001	2051	2001	2051
Settlement Alternative	6,141	8,909	546	546	0	1,686	0	5,500	6,687	16,641
No Action	6,141	6,987	546	546	0	1,686	0	7,431	6,687	16,641
Non-Settlement Alternative 1	6,141	8,909	546	546	0	1,686	0	5,500	6,687	16,641
Non-Settlement Alternative 2	6,141	6,987	546	546	0	1,686	0	7,431	6,687	16,641
Non-Settlement Alternative 3A	6,141	6,987	546	546	0	1,686	0	7,431	6,687	16,641
Non-Settlement Alternative 3B	6,141	8,909	546	546	0	1,686	0	5,500	6,687	16,641

Note: A more detailed breakdown of supplies may be found in Appendix C.

It is estimated that the demand for water at the end of the CAP contract period would be approximately 16,641 af. For all alternatives, there is estimated to be no unmet demand. In the Settlement Alternative, Non-Settlement Alternative 1 and 3B, 1,931 afa of demand are met by the additional CAP allocation. Alternatively, this 1,931 afa of demand are met by CAGRD membership under the No Action Alternative and Non-Settlement Alternative 2 and 3A.

D. Environmental Effects

The following sections include a general description of existing conditions relating to land use, water resources and socioeconomics for each entity. The following summaries also include a description of the existing conditions and brief description of the impacts to biological and cultural resources that would result from construction of CAP delivery facilities and conversion of desert and agricultural lands to urban uses.

1. Land Use

Land use data for the Chaparral City Water Company were obtained based upon the review of 1998 aerial photographs and the result of the field surveys and habitat mapping completed as part of the biological analysis in this EIS. Table L-M&I-29 provides the projected acres of land within the Chaparral City Water Company service area which are agriculture, desert or urban and the number of acres expected to change from the existing category for the years 2001 and 2051.

TableL-M&I-29
CAP Allocation Draft EIS Appendix L
Chaparral City Water Company – Projected Land Use Changes Within the Service Area (in acres)

Alternative	Year	Agriculture	Agriculture Urbanized	Desert	Desert Urbanized	Urban	Changes to Urban Acreage
Settlement Alternative	2001	0	-	5,643	-	7,351	-
	2051	0	0	0	5,643	12,994	5,643
No Action	2001	0	-	5,643	-	7,351	-
	2051	0	0	0	5,643	12,994	5,643
Non-Settlement Alternative 1	2001	0	-	5,643	-	7,351	-
	2051	0	0	0	5,643	12,994	5,643
Non-Settlement Alternative 2	2001	0	-	5,643	-	7,351	-
	2051	0	0	0	5,643	12,994	5,643
Non-Settlement Alternative 3A	2001	0	-	5,643	-	7,351	-
	2051	0	0	0	5,643	12,994	5,643
Non-Settlement Alternative 3B	2001	0	-	5,643	-	7,351	-
	2051	0	0	0	5,643	12,994	5,643

2. Archaeological Resources

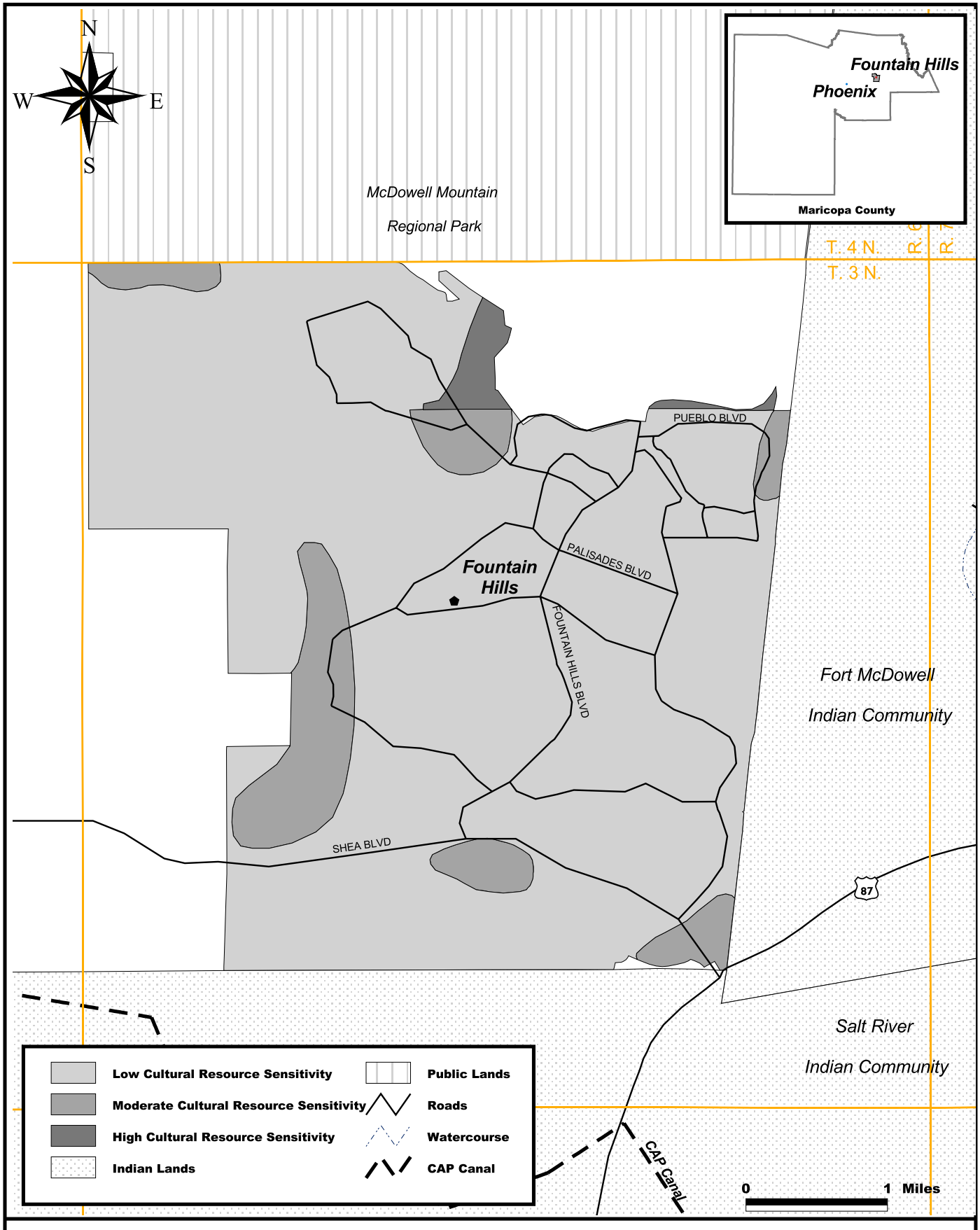
Approximately one-third of the Chaparral City Water Company service area has been surveyed. Surveyed areas range from small (<40 acres) to large (>640 acres) noncontiguous blocks, principally for urban development projects, and linear surveys, primarily for road and utility rights-of-way. Sites ranging from Archaic lithic scatters to Hohokam villages have been documented in the Chaparral service area's high and moderate cultural sensitivity areas. Other prehistoric site types known to occur within the service area include resource procurement loci (e.g., AZ U:5:177(Arizona State Museum [ASM])), cleared circles, rock alignments, canals, and small habitation sites. The entity's proximity to the Salt River Pima-Maricopa Indian Community (SRPMIC) on the south and the Fort McDowell Indian Community (FMIC) on the north suggests protohistoric sites might be present. Known historic site types include settlements (e.g., Maryville), homesteads, roads (e.g., Phoenix to McDowell Road), isolated graves, trash dumps, and water-control features. Sites related to mining and ranching also could be present. A Mormon settlement is known to have been located to the west of the service area boundaries; related deposits, possibly including traditional cultural places, might be expected near the southwest portion of the service area.

Cultural resource sensitivity areas in the service area are shown on Figure L-M&I-15. Based on the limited data used to generate the cultural sensitivity designations, the potential for cultural resource impacts in the Chaparral service area is low to moderate. Mitigation of cultural resource impacts due to urban expansion would be determined by local jurisdictions, and development of applicable permit requirements (such as the CWA Section 404 permit). Mitigation for such impacts would be dependent on the requirements of the local jurisdiction. There would be no cultural resource impacts from construction of CAP water delivery facilities, since no new facilities would be required.

3. Biological Resources

Existing Habitat

The Chaparral City Water Company service area occurs within the eastern portion of the McDowell Mountains up to an elevation of approximately 3,000 feet. The area is composed mainly of a complex of long ridges. Bursage/Foothill Paloverde Association is the only natural habitat recorded where co-dominants include creosote-bush, barrel cactus, little-leaf krameria, and staghorn cholla. Other common trees include velvet mesquite, desert ironwood, and saguaro. Saguaro density is high. The habitat zones located in the service area are shown on Figure L-M&I-16. Table L-M&I-30 provides the habitat acreages in the service area for the habitat zones described above.



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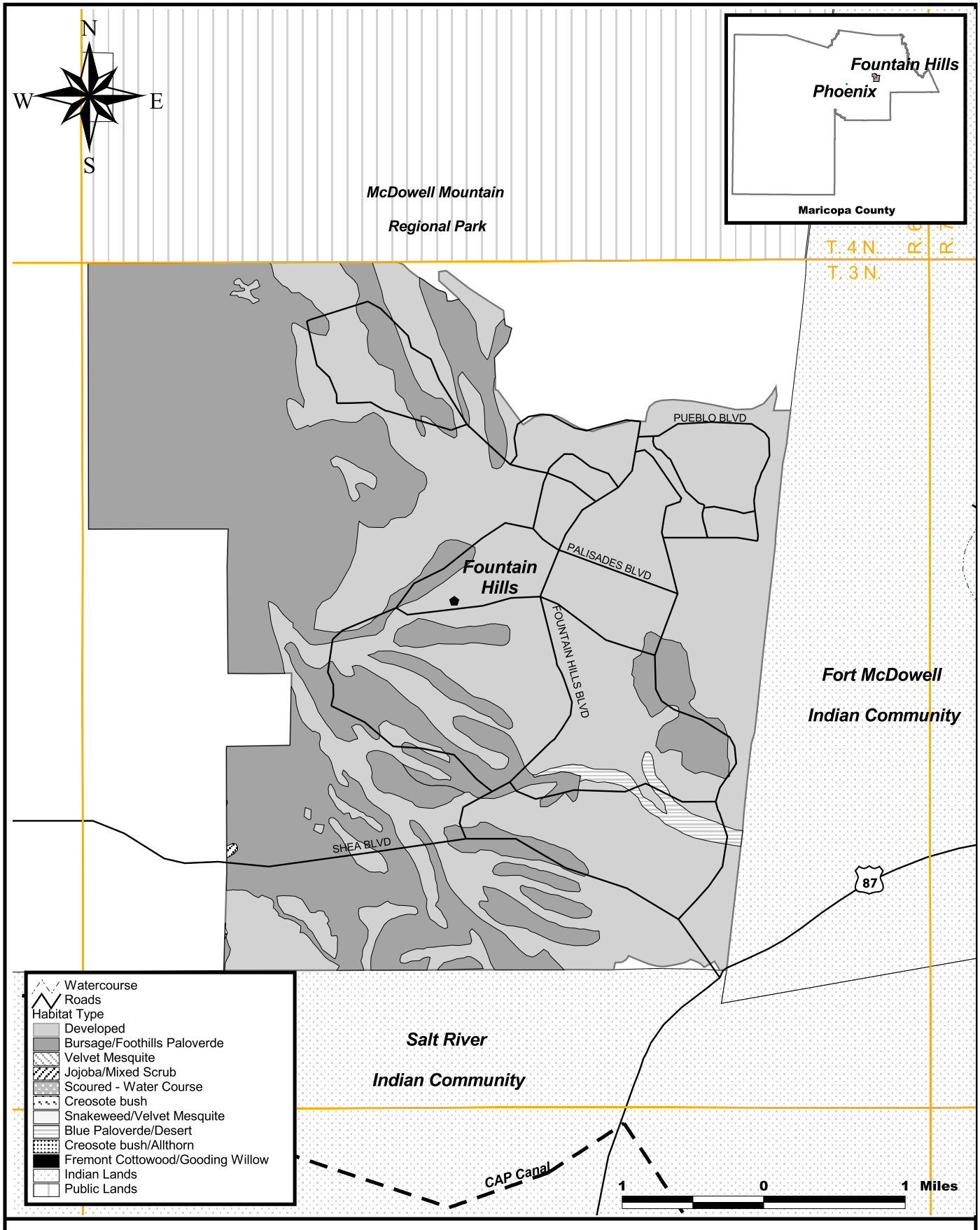
CAP Allocation Draft EIS
Cultural Resources
Chaparral City Water Company

Figure #L-M&I--15



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CAP Allocation Draft EIS
Habitat Zones
Chaparral City Water Company

Figure No. L-M&I-16

Table L-M&I-30 CAP Allocation Draft EIS Chaparral City Water Company– Habitat Acreages	
Vegetation Name	**Acres**
Developed	7,351
Bursage / Foothills Paloverde	5,516
Jojoba / Mixed Scrub	4
Blue Paloverde / Desert	123
Total	**12,994**

Impacts to Biological Resources

Under the No Action Alternative, urban growth within the Chaparral City Water Company service area over the 50-year study period would result in the loss of an estimated 5,643 acres of Sonoran Desertscrub and associated wildlife resources. There may be indirect impacts on wildlife occurring in the adjacent undeveloped habitat. Under the action alternatives, there is no difference in impacts from the No Action baseline. No new CAP water delivery facilities are required, so no additional construction–related impacts to biological resources would occur.

Potential T&E Species and Acres of Potential T&E Species Habitat

Because the allocation of CAP water has no effect on urban growth, there would be no effect on T&E species from the CAP allocation. The appropriate municipal or local governmental jurisdiction would be responsible for complying with the relevant provisions of the ESA, as it permits and approves future urban growth.

The Chaparral City Water Company service area is located within Maricopa County for which there are 14 T&E species listed by the USFWS. However, potential habitat only exists for cactus ferruginous pygmy-owl. Approximately 5,639 acres of potentially suitable habitat for the cactus ferruginous pygmy-owl were identified within the service area.

4. Water Resources

Demands in the Chaparral City Water Company have historically been met by pumping groundwater from the underlying basin fill. In more recent years, CAP water has been used to meet a portion of the demands. While groundwater has been used to meet demands, there have not been substantial drops in groundwater levels historically in this area. The concentration of TDS in the underlying groundwater is generally from about 300 to 850 ppm.

Estimated groundwater level impacts are summarized in Table L-M&I-31, which shows the estimated groundwater level change for the period from 2001-2051 as well as the groundwater level impacts or the difference between the change in groundwater levels for each alternative, relative to the change for the No Action Alternative.

Under the No Action Alternative, groundwater levels would decline by about 48 feet from 2001 to 2051. While CAP water available to the Chaparral City Water Company would be used to meet demands and offset groundwater pumping, increased demands over time would be met through increased groundwater pumping. Substantial changes in groundwater quality would not be anticipated. However, there would be the potential for subsidence in this area. Non-Settlement Alternatives 2 and 3A would have the same amount of CAP water available as the No Action Alternative, and therefore would have the same changes in groundwater levels, groundwater quality, and subsidence.

Groundwater levels under the Settlement Alternative and Non-Settlement Alternatives 1 and 3B would decline by about 27 feet over the 2001 to 2051 period. This smaller decline relative to the No Action Alternative reflects that additional CAP water would be available under these alternatives, resulting in a corresponding reduction in groundwater pumping. Substantial changes in groundwater quality would not be anticipated for these alternatives. Also, subsidence would not be anticipated.

Table L-M&I-31
CAP Allocation Draft EIS
Chaparral City Water Company –Groundwater Data Table

Alternative	**Chaparral***	
	Estimated Groundwater Level Change from 2001-2051 (in Feet)	**Groundwater Level Impact** (in Feet)**
No Action	-48	--
Settlement Alternative	-27	20
Non-Settlement Alternative 1	-27	20
Non-Settlement Alternative 2	-48	0
Non-Settlement Alternative 3A	-48	0
Non-Settlement Alternative 3B	-27	20

*****Values correspond to analysis of Chaparral area of Fountain Hills sub-basin, as discussed in Appendix I.
** Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration. The estimated impact is considered to be more accurate than the estimated decline in groundwater levels.

5. Socioeconomic

The same population growth is supported under all alternatives, including the No Action Alternative. However, the cost of providing water may vary by alternative. Costs were estimated, on a per af basis, of providing the proposed allocations and, in their absence,

alternative water supplies. The alternative water supplies include joining the CAGRD and, if needed, treating and reusing effluent. The difference in cost for this small increment of Chaparral City Water Company's total water supply is considered insignificant. It should be noted that the increment of demand met by the proposed CAP allocation is approximately 11.6 percent of the total year 2051 demand for Chaparral City Water Company.

Table L-M&I-32
CAP Allocation Draft EIS
Chaparral City Water Company –Cost of Potable Water for Additional Allocation Increment

Alternative	Cost of Water ($ per af)	Water Source
Settlement Alternative	154[a]	CAP Allocation
No Action	289 – 293[b]	CAGRD
Non-Settlement Alternative 1	154[a]	CAP Allocation
Non-Settlement Alternative 2	289 – 293[b]	CAGRD
Non-Settlement Alternative 3A	289 – 293[b]	CAGRD
Non-Settlement Alternative 3B	154[a]	CAP Allocation

Notes:
a. Estimated average unit cost in year 2000 dollars.
b. Estimated range of unit costs in year 2000 dollars. Range is due to estimated change in groundwater pumping lifts during study period and does not include wellhead treatment costs.